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TITLE : DARK GREEN GLASS

ABSTRACT : PROBLEM TO BE SOLVED: To obtain a glass having rather low transmittance for visible rays and high shielding performance against UV rays and sun rays by using a glass having a soda lime silica glass component as the basic compsn. and containing specified proportions of Fe₂O₃, CoO, Cr₂O₃, NiO, TiO₂, SO₃, a specified iron ion ratio (Fe²⁺/Fe³⁺) and a specified dominant wavelength measured by using a D-light source.

SOLUTION: As for the silica glass, for example, it contains, by wt.%, 68 to 73 SiO₂, 0 to 3 Al₂O₃, 0 to 5 MgO, 5 to 12 CaO, 10 to 15 Na₂O, and 0 to 3 K₂O. The dark green glass contains, by wt.%, 0.9 to 1.8 Fe₂O₃ (all iron), 0.008 to 0.0165 CoO, 0.01 to 0.045 Cr₂O₃, 0.008 to 0.08 NiO, 0.2 to 0.9 TiO₂, 0.10 to 0.35 SO₃ (all sulfur) and has 0.25 to 0.45 iron ion ratio and 490 to 520 nm dominant wavelength measured by a D-light source. The glass having 5 mm thickness has ≤10% transmittance for UV rays, ≤35% transmittance for visible rays and ≤20% transmittance for sun rays.

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